

REMARKS

Reconsideration and withdrawal of all grounds of rejection are respectfully requested in view of the following remarks. Claims 1, 2, and 4-9 were rejected. By entry of this amendment, claims 11 and 12 have been added. Consequently, claims 1, 2, 4-9, and 11-12 are pending in this application. No new matter has been added.

Rejections under 35 USC § 103(a)

Claims 1, 2, and 4-7 were rejected as being unpatentable over Gere et al. (US 5,590,617), in view of Caserta et al. (US 5,727,494).

Applicant respectfully submits that claim 1 is patentable over the Gere and Caserta references because the combination of these references proposed in this rejection fails to make out a *prima facie* case of obviousness with respect to the subject matter claimed. Some inventions are not *prima facie* obvious because the prior art fails to suggest their **desirability**, *i.e.*, the desirability of making the claimed invention. Other inventions are not *prima facie* obvious because, although the prior art may suggest their desirability, it fails to suggest **how** the invention can be made, *i.e.*, a practical way in which the claimed invention can be made. The Gere and Caserta references cited in the Office Action fail to suggest a desirability of making the claimed invention and how the claimed invention may be made.

Gere and Caserta fail to suggest a **desirability** of making the claimed invention. A person of ordinary skill in the art would lack the motivation to combine these references because the combination, as best understood by Applicant, would result in an undesirable, unsafe, and in fact dangerous vehicle. For example, when in road mode, the steering system of Gere requires the centering ram 161 to be powered to prevent the rack and pinion steering unit from moving relative to the vehicle frame 42. (US 5,590,617, column 12, lines 8-16). Therefore, if the pneumatic centering ram 161 fails, or air pressure is lost in any way, the rack and pinion steering unit is free to move relative to the frame 42. Consequently, steering of the vehicle wheels is

instantly lost. A loss in steering can be especially dangerous when traveling at higher speeds on land.

Further, during grounding of an amphibious vehicle, the wheels are lowered as the vehicle approaches its target, e.g., land, beach or a slipway. The steering system of Gere requires the wheels to be retracted for the marine jet pump to be steered, preventing any simultaneous steering. (US 5,590,617, column 12, lines 24-33). As such, during grounding, if the pneumatic centering ram 161 fails and steering of the wheels is lost, the amphibious vehicle cannot be steered by the wheels or the marine jet pump. On the other hand, the claimed invention has “a safety advantage, in that in the unlikely event of breakage or seizure of the steering cable, a second steering system is available.” (US 2006/0219146, paragraph [0003]). “[T]he steering effect of dependent road wheels may be at least as great as that of, for example, a steering nozzle attached to a jet drive.” (US 2006/0219146, paragraph [0003]). A person of ordinary skill in the art would not combine the Gere and Caserta references to produce an amphibious vehicle steering system because the resulting system would be undesirable at least due to these safety concerns.

Gere and Caserta also fail to suggest **how** the claimed invention may be made. Caserta does not disclose, teach, or suggest how the steering system, wheels, and marine jet pump of Gere may be arranged such that the steering of the wheels and the jet pump can be operated simultaneously and independent of retracting the wheels. Further, in Caserta, the steering cable for the marine propulsion unit is wound around the steering shaft 23. (US 5,727,494, column 5, lines 5-10 and Fig. 9). This type of steering arrangement is not power assisted and unsuitable for high speed planing amphibious vehicles, where the force required to steer the marine propulsion unit is high. (US 2006/0219146, paragraph [0001]). On the other hand, the steering system of the claimed invention is “balanced, so that power assistance to the road steering matches the power assistance required to overcome the self centering tendency of the marine propulsion unit running at high speed.” (US 2006/0219146, paragraph [0004]).

MPEP §2143.02 makes clear that, in order to establish *prima facie* obviousness, the prior art must provide a reasonable expectation of success. In other words, one of ordinary skill in the art must be able to reasonably predict that the proposed modification of the prior art would produce the beneficial result being sought. In this case, the undesirable and unsafe features of the steering system in Gere combined with the complete lack of suggestion in Caserta as to how the claimed invention may be made strongly indicates that the only result one of ordinary skill in the art would anticipate from combining these references is failure. As a result, the combination of prior art references proposed in this rejection fails to make out a *prima facie* case of obviousness with respect to the subject matter claimed.

Therefore, Applicant respectfully submits that claim 1 is patentable over the cited references. Claims 2 and 4-7 are patentable over the cited references at least based on direct or indirect dependence on claim 1 and are in condition for allowance.

Claim 8 was rejected as being unpatentable over Gere et al. (US 5,590,617), in view of Caserta et al. (US 5,727,494) with respect to claim 1, and further in view of Bufler Ernst (DE 3820967 A1).

Applicant respectfully submits that claim 8 is patentable over the cited references. Applicant respectfully submits that claim 1 is patentable over the cited references. Therefore, claim 8 is patentable over the cited references at least based on direct dependence on claim 1 and is in condition for allowance.

Claim 9 was rejected as being unpatentable over Gere et al. (US 5,590,617), in view of Caserta et al. (US 5,727,494) with respect to claim 1.

Applicant respectfully submits that claim 9 is patentable over the cited references. Applicant respectfully submits that claim 1 is patentable over the cited references. Therefore, claim 9 is patentable over the cited references at least based on direct dependence on claim 1 and is in condition for allowance.

New Claims 11 and 12

Applicant respectfully submits that claim 11 is patentable over the Gere and Caserta references. Applicant respectfully submits that claim 1 is patentable over the cited references. Therefore, claim 11 is patentable over the cited references at least based on direct dependence on claim 1 and is in condition for allowance. Support for claim 11 can be found in paragraph [0004] of the application.

Applicant respectfully submits that claim 12 is patentable over the Gere and Caserta references, as features of the claim are not disclosed, taught, or suggested in the references. For example, claim 12 recites that the *power assisted* steering of the retractable wheels and the marine propulsion unit steering are arranged to be *operated simultaneously independent of retracting the wheels*. As such, there are fewer changes to be made in converting from road mode to marine mode or vice versa. (US 2006/0219146, paragraph [0003]). Further, during the delicate transition from water to land, the wheels may be lowered and steered while at least part of the amphibious vehicle is still in the water. This is particularly helpful when maneuvering at low speeds, such as directing the amphibious vehicle to a slipway, because the steering effect of the road wheels may be at least as great as that of, for example, a steering nozzle attached to a jet drive. (US 2006/0219146, paragraph [0003]). Also, because both the retractable wheels and the marine propulsion unit may be operated simultaneously, there is no need for complex systems to ensure that when one or the other system is switched in, it is always initially centered. (US 2006/0219146, paragraph [0003]).

As the Office Action points out, Gere does not disclose, teach, or suggest that the power assisted steering of retractable wheels and a marine propulsion unit be arranged to be *operated simultaneously independent of retracting the wheels*. In fact, the wheels in Gere must be retracted for the marine jet pump to be steered, preventing any simultaneous steering. “During marine operation, the wheels are in the raised position and the tires seat against the lower hull. Since the wheels are held against the hull, the angle of steering knuckle 100 may not be altered

by the side-to-side movement of control arms 154 and 156, instead the lateral movement slides the rack and pinion steering unit in a lateral direction along rack frame rods 158 and 160. When in the marine configuration, the lateral movement of the rack and pinion steering unit controls the direction of thrust produced by marine jet pump 54.” (US 5,590,617, column 12, lines 24-33).

Caserta does not disclose, teach, or suggest how the steering system, wheels, and marine jet pump of Gere may be arranged such that the steering of the wheels and the jet pump can be *operated simultaneously independent of retracting the wheels*. Further, in Caserta, the steering cable for the marine propulsion unit is wound around the steering shaft 23. (US 5,727,494, column 5, lines 5-10 and Fig. 9). This type of steering arrangement is *not power assisted* and therefore unsuitable for high speed planing amphibious vehicles, where the force required to steer the marine propulsion unit is high. (US 2006/0219146, paragraph [0001]). As such, Caserta does not disclose how power assisted steering of retractable wheels and a marine propulsion unit be arranged to be operated simultaneously independent of retracting the wheels.

In summary, independent claim 12 is believed to be allowable.

In view of the above amendments and remarks, it is respectfully submitted that all pending claims of this application are in condition for allowance. Accordingly, a Notice of Allowance for all pending claims of this application is respectfully solicited. Furthermore, if the Examiner believes that additional discussions or information might advance the prosecution of this application, the Examiner is invited to contact the undersigned at the below-listed telephone number.

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Respectfully submitted,

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